

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/003412

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K16/10 C07K16/00 C07K14/18 C12N5/20 C12N7/00
A61K39/42 G01N33/576 A61K39/29

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>COCQUEREL LAURENCE ET AL: "Recognition of native hepatitis C virus E1E2 heterodimers by a human monoclonal antibody." JOURNAL OF VIROLOGY, vol. 77, no. 2, 20 January 2003 (2003-01-20), pages 1604-1609, XP002256295 ISSN: 0022-538X page 1604, right-hand column, line 6 - page 1605, right-hand column, line 12</p> <p style="text-align: center;">----- -/--</p>	1-4,6,9, 14,15

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

29 July 2004

Date of mailing of the international search report

09/08/2004

Name and mailing address of the ISA

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International Application No

PC1/EP2004/003412

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHOUKHI AMELIE ET AL: "Characterization of aggregates of hepatitis C virus glycoproteins." JOURNAL OF GENERAL VIROLOGY, vol. 80, no. 12, December 1999 (1999-12), pages 3099-3107, XP002256296 ISSN: 0022-1317 page 3101, left-hand column, line 24 - right-hand column, line 12; figure 1	1-6,9, 10,12
X	DELEERSNYDER V ET AL: "FORMATION OF NATIVE HEPATITIS C VIRUS GLYCOPROTEIN COMPLEXES" JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 71, no. 1, 1997, pages 697-704, XP002030792 ISSN: 0022-538X cited in the application page 698, right-hand column, line 20 - page 699, right-hand column, line 16; figure 4	1-6,9
A	FOURNILLIER A ET AL: "Expression of noncovalent hepatitis C virus envelope E1-E2 complexes is not required for the induction of antibodies with neutralizing properties following DNA immunization" JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 73, no. 9, September 1999 (1999-09), pages 7497-7504, XP002191425 ISSN: 0022-538X abstract	1-10,12, 14,15
A	SEONG YOUNG RIM ET AL: "Immunogenicity of the E1E2 proteins of hepatitis C virus expressed by recombinant adenoviruses." VACCINE, vol. 19, no. 20-22, 2001, pages 2955-2964, XP002256297 ISSN: 0264-410X abstract	1-10,12, 14,15
X	WO 91/15574 A (SOUTHWEST FOUND BIOMED RES) 17 October 1991 (1991-10-17) page 28, line 22 - page 31, line 22; claims 1-14	16,17, 23,25, 27,30-34
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>PUMEECHOCKCHAI W ET AL: "Hepatitis C virus particles of different density in the blood of chronically infected immunocompetent and immunodeficient patients: Implications for virus clearance by antibody"</p> <p>JOURNAL OF MEDICAL VIROLOGY, vol. 68, no. 3, November 2002 (2002-11), pages 335-342, XP008025913 ISSN: 0146-6615 page 335, left-hand column page 337, left-hand column - right-hand column, line 10 page 340, left-hand column, paragraph 2 - page 341, right-hand column, last paragraph</p> <p>-----</p>	16-29
X	<p>DELPUECH OONA ET AL: "The hepatitis C virus (HCV) induces a long-term increase of interleukin-10 production by human CD4+ T cells (H9)"</p> <p>EUROPEAN CYTOKINE NETWORK, vol. 12, no. 1, March 2001 (2001-03), pages 69-77, XP008025914 ISSN: 1148-5493 page 70, left-hand column, last paragraph - right-hand column, paragraph 1</p> <p>-----</p>	16-29
X	<p>BARTOSCH BIRKE ET AL: "Infectious hepatitis C virus pseudo-particles containing functional E1-E2 envelope protein complexes."</p> <p>JOURNAL OF EXPERIMENTAL MEDICINE, vol. 197, no. 5, 3 March 2003 (2003-03-03), pages 633-642, XP002267934 ISSN: 0022-1007 page 633, left-hand column, line 1 - right-hand column, line 1; figure 2</p> <p>-----</p>	16,21, 22,32-34
A	<p>GRANT P R ET AL: "Quantification of HCV RNA levels and detection of core antigen in donations before seroconversion"</p> <p>TRANSFUSION (BETHESDA), vol. 42, no. 8, August 2002 (2002-08), pages 1032-1036, XP001174198 ISSN: 0041-1132 page 1034, right-hand column, line 16 - line 24</p> <p>-----</p>	18-20

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-15

Antibodies binding to HCV viral envelope protein.

1.1. claims: 1-4 & 9 (partially), 5-8, 10,12,14,15

Antibodies binding to HCV E1E1 complex and more preceisely to the amino acids sequences corresponding to the Sequences ID No 1,2 and 3.

1.2. claims: 1-4 & 9 (partially), 11, 13

Antibody binding to HCV E2 protein.

2. claims: 16-34

Composition of HCV viral particles, methods of preparation of such particles and their uses.

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9115574	A	17-10-1991	AU 7672991 A	30-10-1991
			CA 2079677 A1	04-10-1991
			EP 0527786 A1	24-02-1993
			JP 5508762 T	09-12-1993
			WO 9115574 A1	17-10-1991
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